GE Fanuc Automation

Programmable Control Products

Logicmaster™ 90-30 and Logicmaster 90-70 TCP/IP-Ethernet

User's Manual Supplement

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Caution

Caution notices are used where equipment might be damaged if care is not taken.

Note

Notes merely call attention to information that is especially significant to understanding and operating the equipment.

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Preface

Revisions to This Manual

This manual has been revised to include the Logicmaster 90-30 TCP / IP-Ethernet software package. Because the TCP / IP-Ethernet versions of Logicmaster 90-30 and Logicmaster 90-70 software are similar in operation, the Ethernet-specific documentation for both products has been combined in this manual.

Logicmaster 90-30 TCP / IP Ethernet includes Serial Line Internet Protocol (SLIP). This new feature allows a Logicmaster 90-30 programmer to communicate with 90-30 PLCs on an Ethernet network through a dial-up phone line.

Content of This Manual

This manual describes the TCP / IP versions of Logicmaster™ 90-30 and Logicmaster 90-70 software (Logicmaster 90-30 TCP / IP-Ethernet and Logicmaster 90-70 TCP / IP-Ethernet). The software runs on a Workmaster computer or IBM PC compatible computer connected directly to the Ethernet network. This provides a central location from which to program Series 90™-30 and Series 90-70 PLCs attached to the Ethernet network. These software packages include all the features of the standard Logicmaster 90 software. In addition, the software includes Network Utilities, which facilitate the start-up of a system and provide troubleshooting data for the Logicmaster 90 station.

The manual is organized as follows:

Chapter 1. **Introduction:** This chapter describes the product in general and types of users of the product. A quick guide to the manual is also provided.

Chapter 2. **Installing and Starting Up the Software:** This chapter describes how to install and start up the software on a Workmaster or IBM PC compatible computer.

Chapter 3. **Establishing Communications with PLC Stations:** This chapter explains the task of establishing communications with a Series 90-30 or a Series 90-70 PLC Station to perform Logicmaster functions.

Chapter 4. **Network Utilities:** This chapter describes the functions of the Network Utilities. This chapter is primarily for personnel responsible for the operation of the network.

Appendix A. **Quick Start Install Program (Series 90-70 Only):** This appendix describes the Quick Start Install program that can be used to install Logicmaster 90-70 software, Beame & Whiteside TCP / IP software, and GSM software on the same computer. (This is for the initial installation of these products only, not upgrades.)

Related Publications

Logicmaster™ 90-30/20/Micro Programming Software User's Manual, GFK-0466

Logicmaster™ 90-30/20/Micro Programmable Controllers Reference Manual, GFK-0467

Logicmaster™ 90-70 Programming Software User's Manual, GFK-0263

Logicmaster™ 90-70 Programming Software Reference Manual, GFK-0265

TCP/IP Ethernet Communications for the Series 90-70 PLC User's Manual, GFK-1004

TCP/IP Ethernet Communications for the Series 90-30 PLC User's Manual, GFK-1084

TCP/IP Ethernet Communications for the Series 90-30 PLC Station Manager's Manual, GFK-1186

Installation Guide for Beame & Whiteside Software, GFK-1273

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Libby Allen
Senior Technical Writer

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Chapter 1 Introduction

This manual describes the TCP / IP-Ethernet versions of Logicmaster ™ 90-30 and Logicmaster 90-70 software. These software packages provide a central location from which to program PLCs attached to the Ethernet network via TCP / IP Ethernet Interfaces.*

Software Package	Catalog Number
Logicmaster 90-30 TCP / IP-Ethernet	
3.5" Disks; documentation on CD-ROM	IC641SWC313
3.5" Disks; paper documentation	IC641SWM313
Logicmaster 90-70 TCP / IP-Ethernet	
3.5" Disks; documentation on CD-ROM	IC641SWC713
3.5" Disks; paper documentation	IC641SWM713

The TCP / IP-Ethernet version of the Logicmaster software package includes all the features of the respective standard Logicmaster software package. In addition, it includes a set of Network Utilities that facilitate PLC address list management and Beame & Whiteside TCP / IP software.

The Logicmaster 90-70 TCP / IP-Ethernet package includes GEnet System Manager (GSM) software (IC651EN5042), which is required to download configuration files and communications software to the TCP / IP Ethernet Interfaces (IC697CMM741) located in each Series 90-70 PLC on the network. The GSM can be installed on the same PC as that used for Logicmaster 90-30 / 90-70 software, or on a separate PC. GSM is not needed for Series 90-30 TCP / IP Ethernet interfaces.

Figure 1-1 shows the major components of an Ethernet network designed to program and configure Series 90-30 or 90-70 PLCs using Logicmaster 90-30 TCP / IP-Ethernet or Logicmaster 90-30 TCP / IP-Ethernet software. The configuration shown in Figure 1-1 uses a *Direct* Ethernet connection, in which the PC running Logicmaster 90 software incorporates an Ethernet card and is connected directly to the same network as the PLCs.

The Logicmaster 90-30 TCP / IP-Ethernet package also supports Serial Line Internet Protocol (*SLIP*), as an alternative to the Direct Ethernet connection. Using SLIP, a remote PC, running Logicmaster 90 software, connects to a modem via a COM port. The PC communicates via telephone line with a SLIP server that is connected to the network with the PLCs.

* The TCP / IP protocols and the software that supports them are distinct from those used to perform similar functions via OSI-Ethernet protocols.

The Logicmaster 90-30/90-70 TCP/IP Network

For the software package to operate, there must be a network of Series 90-30 or Series 90-70 PLCs and a personal computer for running the Logicmaster 90-30 or Logicmaster 90-70 TCP / IP-Ethernet software. General network requirements are summarized below, with requirements for software and firmware listed in Table 1-1.

- **PLC Stations.** Each station consists of a Series 90-30 or Series 90-70 PLC with installed Ethernet Interface.
- **GEnet System Manager (GSM).** *Series 90-70 only.* This consists of a personal computer attached to the network with the GSM software installed. The GSM is required to configure the TCP / IP Interfaces installed in the Series 90-70 PLCs before the Logicmaster package can communicate with them. Refer to GFK-1004, *TCP/IP Communications for the Series 90-70 User's Manual*, for information about GSM operation.
- **Logicmaster 90-30 or Logicmaster 90-70 TCP/IP Ethernet Station.** This consists of Logicmaster 90-30 or 90-70 TCP / IP-Ethernet software installed in a Workmaster computer or PC-compatible computer that has an Ethernet card (for Direct Ethernet connections) or a COM port and modem (for SLIP connection).
- **Cable plant.** The cable plant should be designed by an experienced Ethernet installer. This consists of the cabling and physical equipment necessary to connect the devices listed above to a common network. SLIP connection further assumes the availability of a SLIP server on the network to which the PLCs are connected.

Table 1-1. Logicmaster 90 Prerequisites for PLCs

Installation	PLC CPU Firmware	Ethernet Interface Software
Logicmaster 90-30 TCP / IP	Series 90-30 PLC Rev. 6.5 or later	Ethernet Interface TCP / IP software Rev. 1.10 or later
Logicmaster 90-70 TCP / IP	Series 90-70 PLC Rev. 4.12 or later	Ethernet Interface PROM Rev. 1.15 or later TCP / IP software Rev. 1.28 or later

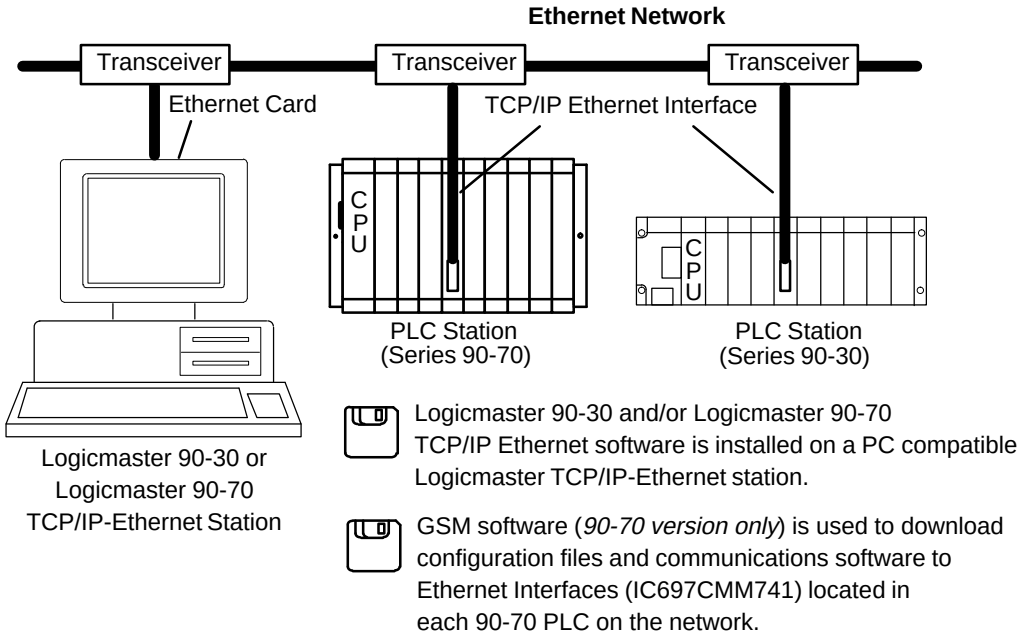
Ethernet Network
Transceiver
Transceiver
Transceiver
Ethernet Card
TCP/IP Ethernet Interface
CPU
CPU
PLC Station
(Series 90-70)
PLC Station
(Series 90-30)
Logicmaster 90-30 or
Logicmaster 90-70
TCP/IP-Ethernet Station
Logicmaster 90-30 and/or Logicmaster 90-70 TCP/IP Ethernet software is installed on a PC compatible Logicmaster TCP/IP-Ethernet station.
GSM software (90-70 version only) is used to download configuration files and communications software to Ethernet Interfaces (IC697CMM741) located in each 90-70 PLC on the network.

Figure 1-1. The Logicmaster 90 TCP/IP Network Using Direct Ethernet Connection

Contents of the Software Packages

Table 1-2. Software Package Contents

Package	Contents
Logicmaster 90-30 TCP/IP-Ethernet (IC641SWC313 / IC641SWM313)	5 – Beame & Whiteside™ diskettes (3.5-inch) 2 – Logicmaster diskettes (3.5-inch) 1 – *Logicmaster 90-30/90-70 TCP/IP-Ethernet Software User's Manual Supplement*, GFK-1029 (this manual) 1 – *Installation Guide for Beame & Whiteside Software*, GFK-1273 1 – *Important Product Information* for Logicmaster 90-30 TCP / IP-Ethernet Software, GFK-1323 1 – Documentation library, CD-ROM (for IC641SWC313 package) 1 – Documentation library, paper (for IC641SWM313 package)
Logicmaster 90-70 TCP/IP-Ethernet (IC641SWC713 / IC641SWM713)	1 – Quick Start Install Diskette (3.5-inch) 1 – GSM diskette labeled Series 90-70 TCP / IP Ethernet SW, IC651ENS042 (3.5-inch) 5 – Beame & Whiteside diskettes (3.5-inch) 2 – Logicmaster diskettes (3.5-inch) 1 – *Logicmaster 90-30/90-70 TCP/IP-Ethernet Software User's Manual Supplement*, GFK-1029 (this manual) 1 – *Installation Guide for Beame & Whiteside Software*, GFK-1273 1 – *Important Product Information* for Logicmaster 90-70 TCP / IP-Ethernet Software, GFK-1030 1 – Documentation library, CD-ROM (for IC641SWC713 package) 1 – Documentation library, paper (for IC641SWM713 package)

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Users of the Software Package

This manual provides information for two groups of users of the Logicmaster 90-30 or 90-70 TCP/IP-Ethernet Software package:

- PLC Logic Programming Personnel
- Network Personnel

PLC Logic Programming Personnel use the Logicmaster 90 TCP/IP-Ethernet software package to program and perform CPU and I/O configuration for Series 90-30 or Series 90-70 PLCs. These tasks involve establishing connections from Logicmaster to various PLCs on the network. This group is usually not involved in setting up and maintaining the network.

Network Personnel will use the Network Utilities to build the list of PLCs.

Quick Guide to this Manual

This manual is a supplement to the user's and reference manuals for Logicmaster 90-30 and Logicmaster 90-70 software – it documents the aspects of Logicmaster software that are unique to the TCP/IP versions. Table 1-3 identifies the tasks unique to the TCP/IP-Ethernet versions of Logicmaster 90-30 and Logicmaster 90-70 software and where to find them in this manual. To use the software to program logic in the PLC, consult the appropriate user's and reference manuals listed in the "Preface."

Table 1-3. Quick Guide to this Manual

Task	Where to look in this Manual
Installing and Starting-Up the Software	Chapter 2. Installing and Starting-Up the Software Appendix A. Quick Start Install Program (90-70 only)
Establishing a Connection to a PLC for PLC Program and Configuration Download	Chapter 3. Establishing Communications with PLC Stations
Building PLC address lists	Chapter 4. Network Utilities

Chapter 2 Installing and Starting the Software

This chapter describes how to install the TCP/IP-Ethernet versions of Logicmaster 90-30 and Logicmaster 90-70 software on a personal computer.

The topics covered in this chapter are:

- Computer requirements for running the software
- Configuring the TCP/IP Ethernet Interfaces
- Installing the Beame & Whiteside BW-Connect™ TCP Product
  - Preliminary Steps
  - Installing the Beame & Whiteside Software for Direct Ethernet Connection
  - Installing the Beame & Whiteside Software for SLIP Communications
- Installing the Logicmaster 90 TCP/IP-Ethernet Software
- Modifying CONFIG.SYS, AUTOEXEC.BAT, and PROTOCOL.INI
- Starting the software

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Computer Requirements for Running the Software

To install and run Logicmaster 90-30 TCP/IP or Logicmaster 90-70 TCP/IP software, the computer must meet the following requirements.

- DOS Version 5.0 or later
- 80386, 80486 or Pentium™ computer
- 8.5 Megabytes of available space on hard disk for Logicmaster and Beame & Whiteside-Connect TCP products
- 2 Megabytes of RAM
- 600 Kilobytes (614,400 bytes) of Free Conventional Memory. To determine this value for your personal computer, execute the DOS command **MEM/C/P** after completely installing the software package and rebooting.
- Diagnostics disk from Ethernet interface vendor (Direct Ethernet Connection only)

Configuring the TCP/IP Ethernet Interfaces

Series 90-30

Refer to GFK-1084, *TCP/IP Ethernet Communications User's Manual* for configuration information.

Series 90-70

Note

If you are installing the Logicmaster 90-70 TCP/IP Ethernet software for the first time, refer to Appendix A, Quick Start Installation Program. The Quick Start Installation Program installs Logicmaster 90-70 software, Beame & Whiteside™ software for direct Ethernet communication, and the GSM software.

The GSM is used to configure the TCP/IP Ethernet Interfaces installed in the Series 90-70 PLCs on the network. This must be done before Logicmaster 90-70 software can communicate with the PLCs. The operation of the the GSM is described in GFK-1004, *TCP/IP Ethernet Communications User's Manual.* Refer to appendix A of this manual (GFK-1029) if you are installing the GSM software on the same PC as Logicmaster 90-70 software. Refer to GFK-1004 if you are installing the GSM software on a separate PC.

Note

If you are *updating* Logicmaster 90-70 Software or the Beame & Whiteside software, refer to the instructions in this chapter. If you are *updating* the GSM software, refer to GFK-1004 for instructions.

Installing Logicmaster 90-30 or 90-70 for TCP/IP Ethernet

Two types of Ethernet access are available. Each of these alternatives requires a distinct installation procedure for the Beame and Whiteside TCP/IP software.

- **Direct Ethernet connection**: The PC running Logicmaster 90 software incorporates an Ethernet card and is connected directly to the same network as the PLCs.
- **SLIP**: A remote PC, running Logicmaster 90 software, uses a COM port to connect to a modem. The PC communicates via telephone line with a SLIP server that is connected to the network with the PLCs.

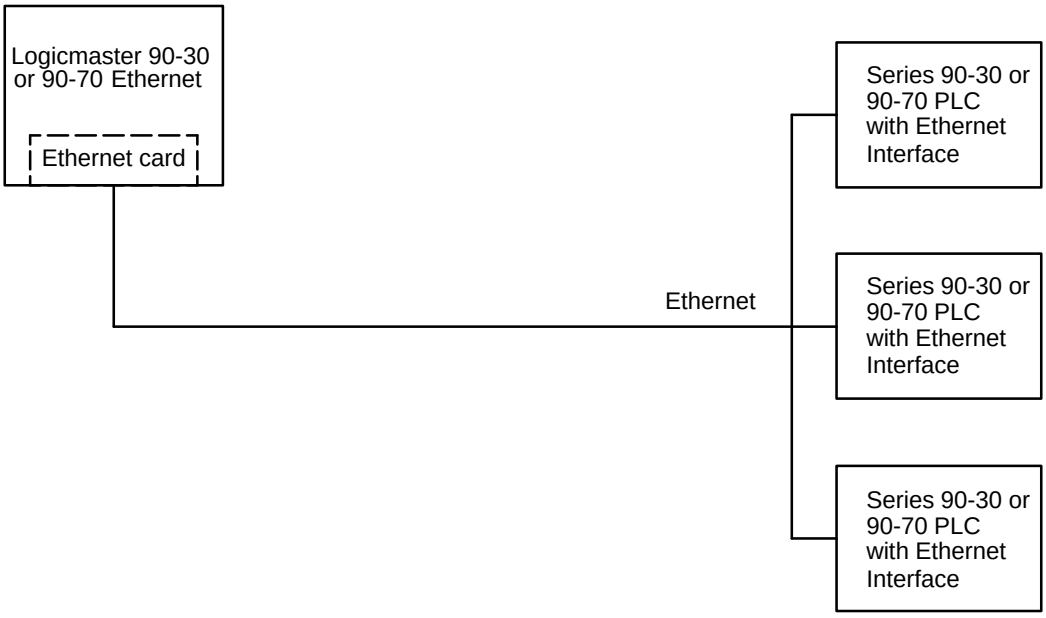
Logicmaster 90-30 or 90-70 Ethernet
Ethernet card
Ethernet
Series 90-30 or 90-70 PLC with Ethernet Interface
Series 90-30 or 90-70 PLC with Ethernet Interface
Series 90-30 or 90-70 PLC with Ethernet Interface

Figure 2-1. Configuration Block Diagram for Direct Ethernet Connection

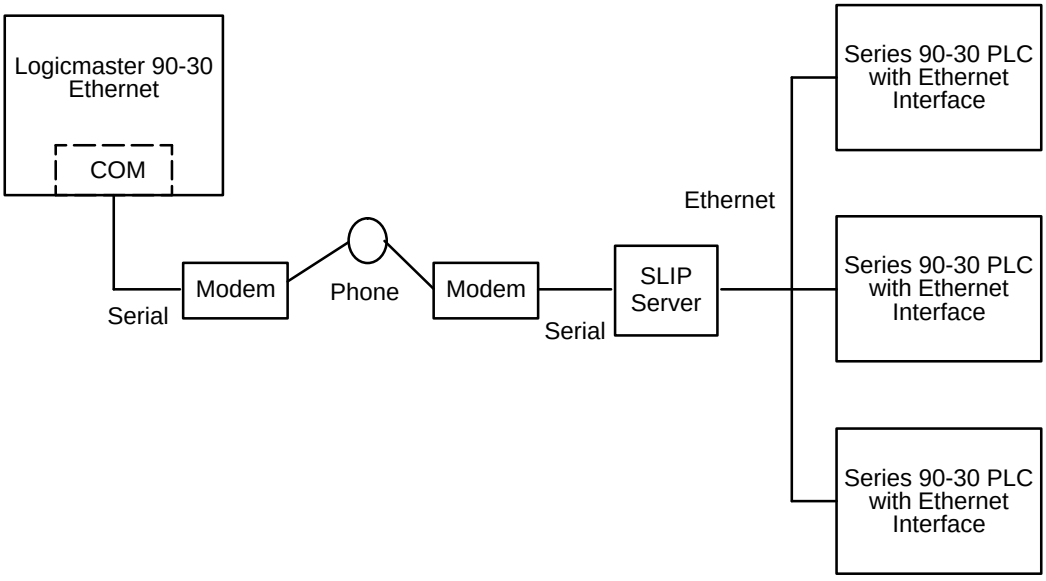

Figure 2-2. Configuration Block Diagram for SLIP Connection (Series 90-30 Only)

Preliminary Steps

This procedure assumes that you will be using an NDIS driver. If you are using ODI, the procedure may vary. The following steps should be completed in order.

1. Make a bootable floppy disk.
2. Save your existing AUTOEXEC.BAT and CONFIG.SYS files.
3. If you will be using Direct Ethernet connection, install the PC Ethernet adapter in your PC.
4. Make a copy of the Beame & Whiteside Preliminary Worksheet and fill it out. (A partially filled out worksheet is shown in Appendix A.) You will need to determine:
   - □ IRQ Address
   - □ I/O Address
   - □ Shared memory (Yes or No − If yes, you will need the start address.)
   - □ Buffer space 10,000 for Logicmaster 90 software
   - □ Software interrupt vector

   For requirements specific to SLIP, refer to page 2-7.
5. If your PC Ethernet adapter has installation software with it, run the INSTALL program.
6. Continue with installation:

   D. If you are using 90-70 and this is an initial installation on this PC, continue with the Quick Start installation in Appendix A.

   E. If this installation is 90-30 and you will use SLIP, continue on page 2-7.

   F. Otherwise, continue on page 2-5.

Installing Beame & Whiteside Software for Direct Ethernet Connection

General

The Beame & Whiteside-Connect TCP product comes with thorough installation instructions in the *Installation Guide for Beame & Whiteside Software,* GFK-1273. Some specific areas of the process are worth noting.

1. The *Installation Guide* (GFK-1273) contains information for two Beame & Whiteside products: BW-TCP and BW-NFS. Only BW-TCP is distributed with this product.

2. Be sure that the system requirements given in GFK-1273 are met. This will assure that the process is not terminated before completion.

3. Fill out the Preliminary Worksheet in GFK-1273. A modified version of this worksheet also appears in Appendix A of this manual. Having this information available will make the installation process easier.

4. When running the install program, you will be given the option of setting the Buffer Space used by the driver. The default value is 26000. Changing this to 10000 will free up more conventional memory, which is needed for Logicmaster 90 software to run.

When you have installed the Beame & Whiteside software in your PC, you must check your system to determine if the required amount of Free Conventional Memory is available. Instructions on how to read this value are given in "Computer Requirements for Running the Software" on page 2-2. If the requirements are not met, refer to the documentation for your memory manager software to find examples on how to load device drivers into high memory. (For example, MS-DOS EMM386 memory manager uses the command DEVICEHIGH in place of the standard DEVICE statement to load a driver into high memory.) We recommend loading both Beame & Whiteside drivers (ETHDEV.SYS and TCPIP.SYS) into high memory.

Once memory requirements are met, various utilities provided by the BW-Connect product should be used to test the validity of the TCP/IP configuration. In particular, the "ping" utility should be used to verify that the PLCs to which you desire communication are reachable. Further information on the use of "ping" can be found in the *TCP/IP Ethernet Communications for the Series 90-70 PLC User's Manual* (GFK-1004) and in *TCP/IP Ethernet Communications for the Series 90-30 PLC Station Manager's Manual* (GFK-1186).

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Installation Steps

1. Edit your AUTOEXEC.BAT and CONFIG.SYS. files so that they contain the following lines.

CONFIG.SYS

```
FILES=20
BUFFERS=48
DEVICE=\DOS\HIMEM.SYS
DEVICE=\DOS\EMM386.EXE RAM 1024
```

Notes:

- 1. The number of buffers may need to be reduced (not below 15) if the minimum memory requirements are not met.
- 2. If your computer has excludes and includes on the EMM386 line, you may need to add them.

AUTOEXEC.BAT

```
PROMPT $P$G
PATH=C:\DOS;C:\
```

2. Install the Beame & Whiteside software.

Notes:

1. Let the Beame & Whiteside software modify your system files.
2. Do not do the Windows installation.

3. Start the Beame & Whiteside software and confirm that communication is established between the PC and the PLC.

The **ping** command should be issued from the PLC to the computer as well as from the computer to the PLC to insure that the hardware interrupt is properly set in the computer configuration.

- □ Confirm that you can successfully issue **ping** from the PC and receive a proper response.
- □ Confirm that you can successfully issue **ping** from the PLC to the PC and receive a proper response.

The next step is to install the Logicmaster 90 software (see page 2-9).

Note: Let Logicmaster 90 modify your system files.

Installing Beame & Whiteside Software for SLIP Communications

SLIP allows a Logicmaster 90-30 programmer to communicate to 90-30 PLCs on an Ethernet Network through a dial-up phone line. A SLIP server (Router) is needed on the Ethernet network and a modem is needed on the Logicmaster end.

Setting Up SLIP Communications

For Logicmaster 90-30 Ethernet to use SLIP communications, the Beame & Whiteside software must be configured for use with SLIP.

The Beame and Whiteside installation requirements are outlined below:

1. Required information to be determined before installing the Beame & Whiteside software:
   - Network Card: SLIP
   - Determine what port in the PC will have the modem for SLIP communication
     - Hardware Interrupt: 4 for COM1; 3 for COM2.
     - I/O Address: 3F8 for COM1; 2F8 for COM2.
     - Buffer = 10,000
   - No Shared Memory.
   - The SLIP server must be configured by the Ethernet Network system administrator to have an IP address to be used by Logicmaster 90 software. See your network administrator to get the appropriate IP address.
   - The Subnetwork Mask ***MUST*** be set to 255.255.255.255.
   - The Default Gateway ***MUST*** be set to 255.255.255.255.
2. Start with the following CONFIG.SYS and AUTOEXEC.BAT files. (In the following steps, the Beame & Whiteside software will automatically modify them.)

CONFIG.SYS

```
FILES=20
BUFFERS=48
DOS=HIGH,UMB
DEVICE=\DOS\HIMEM.SYS
DEVICE=\DOS\EMM386.EXE RAM 1024
```

AUTOEXEC.BAT

```
PROMPT $P$G
PATH=C:\DOS;\C;\
```

   Note that you may need *exclude* or *include* statements on the EMM386 line.

3. Install the Beame & Whiteside software.
   - Do the install for DOS (at the DOS prompt, type **a:bwinstall**). Do not do the install for Windows.
   - Answer **SLIP for COM1 or COM2** to the *Choose Network Adapter* prompt.
4. Choose **Packet Driver** for the Selected Driver Type.
5. Use the above information in the Network Configuration screen. Default values should be appropriate for all fields except Hardware Interrupt, I/O address, IP Address and Default Gateway.

6. When the software prompts you to let it update the system files automatically, type **Y**.
7. Do not do Windows setup.
8. Edit the AUTOEXEC.BAT and CONFIG.SYS files as follows:

Note

The Beame & Whiteside software automatically puts the **C:\BWTCP\PACKET...** line into the AUTOEXEC.BAT file. It is *essential* that you add the word **SLIP** after 0X60 and the baud rate at the end of the line. Enter the baud rate that your modem is set at. A baud rate of **38400** is shown in the line below as an example.

AUTOEXEC.BAT

change: `C:\BWTCP\PACKET\SLIP8250.COM 0X60 0X4 0X3F8`
to: `C:\BWTCP\PACKET\SLIP8250.COM 0X60 SLIP 0X4 0X3F8 38400`

remove: **C:\BWTCP\STARTNET**
remove: **SET BWSTAK=C:\BWTCP**
remove: **SET DOMAIN=CHO.GE.COM**

CONFIG.SYS

change: `DEVICE=C:\BWTCP\ETHDEV.SYS`
to: `DEVICEHIGH=C:\BWTCP\ETHDEV.SYS`

change: `DEVICE=C:\BWTCP\\TCPIP.SYS 1460 2920 20`
to: `DEVICEHIGH=C:\BWTCP\\TCPIP.SYS 1460 2920 20`

Starting the Beame & Whiteside Software

1. In the BWTCP directory, type:

   BWDIALER /C=<port#> /B=38400 <phone #>

   This will start the the SLIP client running out of the COM port at the entered baud rate. It will also dial the number <phone #>.
2. Most SLIP Servers will then require a login and a password to complete connection establishment. Check with your System Administrator to get details for login.
3. Check with your System Administrator to determine what, if anything, you have to do after login to the server to start SLIP
4. Press **ALT-X** to return to the DOS prompt on the host PC.
5. Confirm that you can successfully issue **ping** from the PC and receive a proper response.
6. Confirm that you can successfully issue **ping** from the PLC to the PC and receive a proper response.

The next step is to install the Logicmaster 90 software (see page 2-9).

Installing the Logicmaster 90 TCP/IP Ethernet Software

The Logicmaster 90-30 TCP/IP-Ethernet and Logicmaster 90-70 TCP/IP-Ethernet software packages are each shipped on two 3.5-inch, high-density distribution diskettes. The instructions below explain how to load the software package files from the distribution diskettes onto your hard disk. The instructions assume the use of floppy drive A, but you can also load the software from another drive.

1. Insert distribution diskette 1 into Drive A, or another drive if desired.
2. From the A: prompt, type.

   ```
   A:\> install
   ```

3. A screen appears prompting you to enter the destination hard drive for the software package. Enter the drive letter (or use the default drive that is provided) and press **Enter**.
4. If this is the first installation of the software, a screen for registering the software appears. This screen contains prompts for your name, company, address, and software serial number. Fill in this information.

   ### Note

   The serial number for your software is located on the back of diskette number 1.

   After you have entered the information, press **Enter**.
5. A screen for confirming the registration information appears next. If the information you entered is correct, press **Enter**. If it is not, press **Esc** to correct any information. If you pressed **Enter,** the data is then written onto the master distribution disk. (Don't write protect the master disk until after the first installation.)
6. The Copyright screen then appears. Press **Enter** to continue.
7. The AUTOEXEC.BAT and CONFIG.SYS modification screen appears next. Press **Y**if you want the Install program to automatically modify these files. Press **N** if you want to modify the files yourself.
8. If you pressed **Y**, the Install program will create an LM90 directory on the hard drive you specified, and immediately begin to write the Logicmaster software to it.

   If you pressed **N**, so you could modify the AUTOEXEC.BAT and the CONFIG.SYS files yourself, a screen will appear prompting you to make the modifications (shown in step 10) after installing the software. A confirm prompt also appears at the bottom of this screen which permits you to change your mind and have the Install program modify them for you.

   Press **Y** for automatic update or press **N** if you still want to modify them yourself. In either case, the Logicmaster 90 TCP/IP files will begin installing on your hard disk at this time.
9. While the software is being installed, a screen will appear indicating that the install is "WORKING". When all the files from a diskette are installed, you will be prompted to insert the next diskette and press **Enter** to proceed. Do this step for diskette 2.
10. After the Install program writes all the files to the destination drive, your software package has been installed. If you elected to modify the AUTOEXEC.BAT and CONFIG.SYS files yourself, do so now (see page 2-10).

Modifying CONFIG.SYS, AUTOEXEC.BAT, and PROTOCOL.INI

Note

This section assumes you are using an NDIS-conforming Ethernet driver.

After you have installed the Beame & Whiteside TCP/IP software and the Logicmaster 90 software, check the CONFIG.SYS, AUTOEXEC.BAT, and PROTOCOL.INI files to make sure they include the following entries, *then reboot your computer.*

Note

The files below are sample files produced when installing Beame & Whiteside software and Logicmaster software on a PC, using an Etherlink/MC network card. Beame & Whiteside refers to this card by the name "*ELNKMC*" in CONFIG.SYS and PROTOCOL.INI. ***The Beame & Whiteside name for your network card must appear in the appropriate lines in the CONFIG.SYS and PROTOCOL.INI files.***

CONFIG.SYS

Make sure the C:\CONFIG.SYS file has the following entries. See the note on network card names above.

Direct Ethernet Connection	SLIP
FILES = 20	same
BUFFERS = 48	same
DEVICE = \DOS\HIMEM.SYS	same
DEVICE = \DOS\EMM386.EXE RAM 1024	same
DOS = HIGH, UMB	same
DEVICE=C:\BWTCP\PROTMAN.DOS /I:C:\LANMAN.DOS	same
DEVICEHIGH=C:\BWTCP*ELNKMC*.DOS	**DEVICEHIGH=C:\BWTCP\ETHDEV.SYS**
DEVICEHIGH=C:\BWTCP\NDIS\ETHDEV.SYS	**DEVICEHIGH=C:\BWTCP\TCPIP.SYS**
DEVICEHIGH=C:\BWTCP\NDIS\TCPIP.SYS 1460 2920 20	

Note

If, after making changes to these files, your computer will not reboot properly or if you have memory problems running Logicmaster software, you will need to change the line

```
DEVICE=\DOS\EMM386.EXE RAM 1024
```

to

```
DEVICE=\DOS\EMM386.EXE noems
```

then reboot and try again.

AUTOEXEC.BAT

Make sure the C:\AUTOEXEC.BAT file has the following entries.

Direct Ethernet Connection	SLIP
C:\BWTCP\NDIS\NETBIND **prompt PG** **PATH=C:\DOS;C:\;*Drive ID:*\LM90** **SET BWSTATE=C:\BWTCP** **SET DOMAIN=*abc.com*** **SET PATH=C:\BWTCP; %path%**	same same same same same same **C:\BWTCP\PACKET\SLIP8250.COM 0X60 SLIP 0X4 0X3F8 38400**

The *Drive ID* is the letter corresponding to the hard disk drive where the Logicmaster 90-30 TCP/IP or Logicmaster 90-70 TCP/IP software is installed.

The line beginning with "SET DOMAIN=" defines the company domain name. If you don't have a company domain name, use a three letter code for the company followed by ".com" all in lower case. Example: **abc.com**

PROTOCOL.INI (Direct Ethernet Connection Only)

Make sure the C:\LANMAN.DOS\PROTOCOL.INI file has the following entries. See the note on network card names on page 2-10.

```
[ProtMan]
    DriverName=PROTMAN$

[ELNKMC]
    DRIVERNAME = ELNKMC$

[ETHDEV]
    DriverName=ETHDEV27
    Bindings=ELNKMC
```

Starting the Logicmaster 90 Software

Perform the following steps to start the Logicmaster 90 software package.

1. Type **LM90** at the DOS prompt and press the **Enter** key. The Logicmaster 90 main menu is displayed.

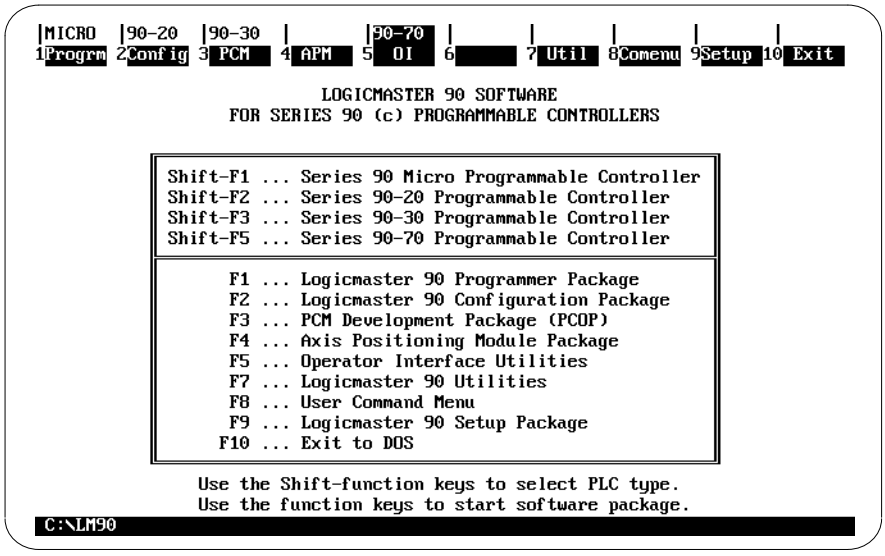
|MICRO |90-20 |90-30 | |30-70 | | | | |
1Progrm 2Config 3 PCM 4 APM 5 OI 6 7 Util 8Comenu 9Setup 10 Exit
LOGICMASTER 90 SOFTWARE
FOR SERIES 90 (c) PROGRAMMABLE CONTROLLERS
Shift-F1 ... Series 90 Micro Programmable Controller
Shift-F2 ... Series 90-20 Programmable Controller
Shift-F3 ... Series 90-30 Programmable Controller
Shift-F5 ... Series 90-70 Programmable Controller
F1 ... Logicmaster 90 Programmer Package
F2 ... Logicmaster 90 Configuration Package
F3 ... PCM Development Package (PCOP)
F4 ... Axis Positioning Module Package
F5 ... Operator Interface Utilities
F7 ... Logicmaster 90 Utilities
F8 ... User Command Menu
F9 ... Logicmaster 90 Setup Package
F10 ... Exit to DOS
Use the Shift-function keys to select PLC type.
Use the function keys to start software package.
C:\LM90

Figure 2-3. Logicmaster 90 Software Main Menu

2. Select the Series 90-30 Programmable Controller (**Shift + F3**) or the Series 90-70 Programmable Controller (**Shift + F5**).
3. To select the Ethernet version of the Logicmaster software, perform steps A and B:
   A. From the Main Menu, select **F9 ... Logicmaster 90 Setup Package**. The Logicmaster 90 Setup File Editor menu will be displayed.

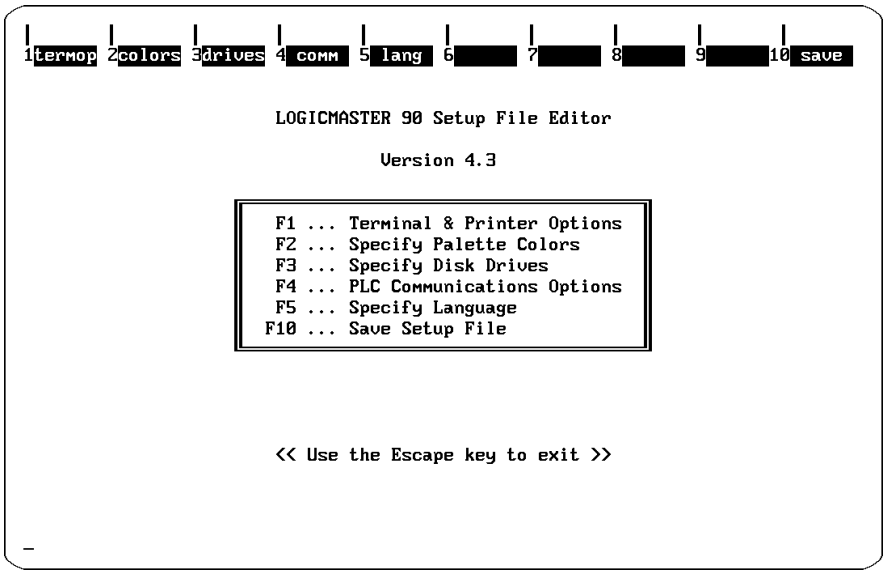
| | | | | | | | | | |
1termop 2colors 3drives 4 comm 5 lang 6 7 8 9 10 save
LOGICMASTER 90 Setup File Editor
Version 4.3
F1 ... Terminal & Printer Options
F2 ... Specify Palette Colors
F3 ... Specify Disk Drives
F4 ... PLC Communications Options
F5 ... Specify Language
F10 ... Save Setup File
<< Use the Escape key to exit >>

Figure 2-4. Logicmaster 90 Setup File Editor Menu

B. From the Logicmaster 90 Setup File Editor menu, select **F4 ... PLC Communications Options**. The following menu will be displayed.

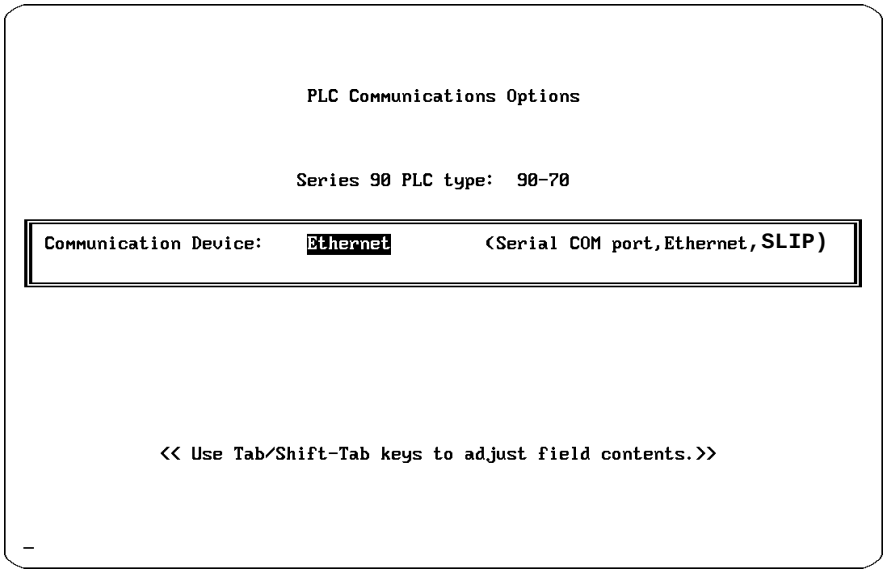

Figure 2-5. Logicmaster 90 PLC Communications Options Menu

C. In this menu, press the **Tab** key to select either the Ethernet option or the SLIP option. Use Ethernet if you installed Beame & Whiteside software for Direct Ethernet connection. Use SLIP if you installed Beame & Whiteside software for SLIP communications from a remote site. (The default choice is Serial COM Port.)

D. Press **Esc** to return to the Setup File Editor menu and then press **F10** to save the setup file. The following messages will be displayed:

```
Setup file saved successfully as C:\lm90\lm90.dat
<<Press any key to exit>>
```

4. To return to the main menu, press **Esc, Esc**.
5. To create a PLC list, press **F7** (Logicmaster 90 Utilities) and then press **F1** (Network Utility).
6. Enter password (default is **netutil**).
7. Select the PLC to communicate to. (See page 3-8.)

Chapter 3 Establishing Communications with PLC Stations

This chapter explains the task of establishing communications with a Series 90-30 or Series 90-70 PLC Station to perform Logicmaster 90 functions. The topics discussed in this chapter are:

- Identifying PLCs on the Network
- Establishing Communications
- Storing Programs

Identifying PLCs on the Network

To begin, you must identify the PLCs on the Ethernet network with which Logicmaster may be communicating. Two separate lists are maintained, one for Series 90-30 PLCs and one for Series 90-70 PLCs. The lists are built by entering addressing information in the PLC List Screen, which is part of the Network Utilities. Selecting between the two lists is accomplished in the Logicmaster 90 Main Menu, as shown in Figure 3-1.

Accessing the PLC List Screen

To access the PLC List Screen follow the steps below.

1. First access the Logicmaster 90 Main Menu as shown below. Choose 90-30 or 90-70 by pressing **Shift+F3** or **Shift+F5**.

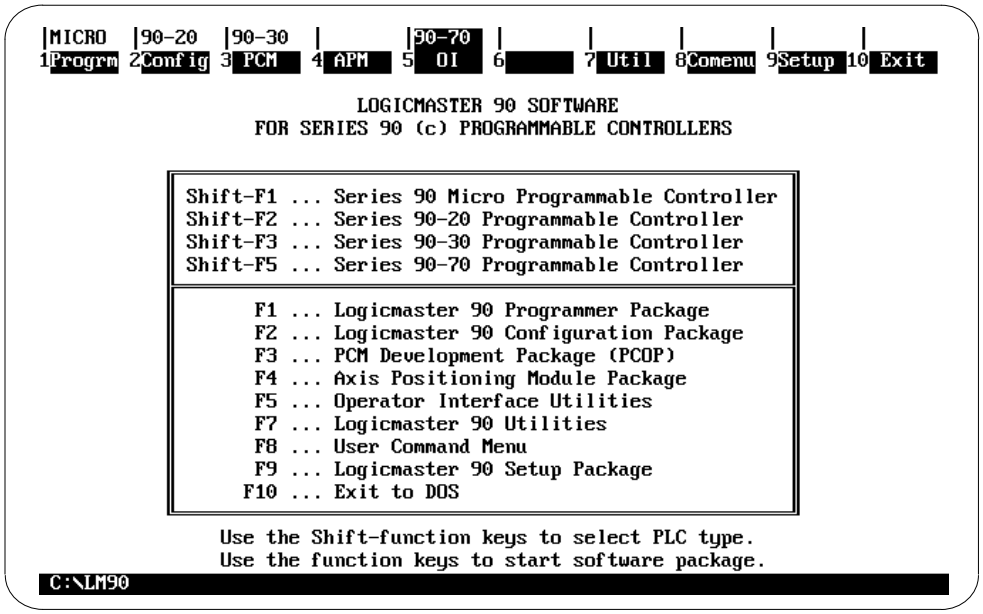
|MICRO |90-20 |90-30 | |90-70 | | | | | |
1Progrm 2Config 3 PCM 4 APM 5 OI 6 7 Util 8Comenu 9Setup 10 Exit
LOGICMASTER 90 SOFTWARE
FOR SERIES 90 (c) PROGRAMMABLE CONTROLLERS
Shift-F1 ... Series 90 Micro Programmable Controller
Shift-F2 ... Series 90-20 Programmable Controller
Shift-F3 ... Series 90-30 Programmable Controller
Shift-F5 ... Series 90-70 Programmable Controller
F1 ... Logicmaster 90 Programmer Package
F2 ... Logicmaster 90 Configuration Package
F3 ... PCM Development Package (PCOP)
F4 ... Axis Positioning Module Package
F5 ... Operator Interface Utilities
F7 ... Logicmaster 90 Utilities
F8 ... User Command Menu
F9 ... Logicmaster 90 Setup Package
F10 ... Exit to DOS
Use the Shift-function keys to select PLC type.
Use the function keys to start software package.
C:\LM90

Figure 3-1. Logicmaster 90 Main Menu

2. From the Logicmaster 90 Main Menu, press **F7... Logicmaster 90 Utilities**. The following screen will appear.

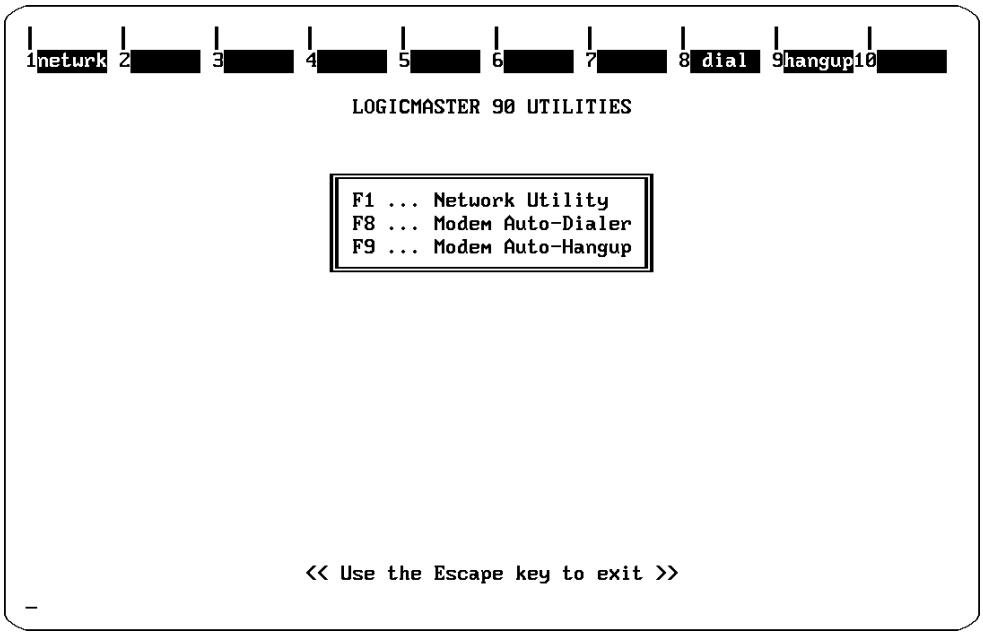

Figure 3-2. Logicmaster 90 Utilities Menu

3. From the Logicmaster 90 Utilities Menu, press **F1 ... Network Utility**. The password screen will appear.

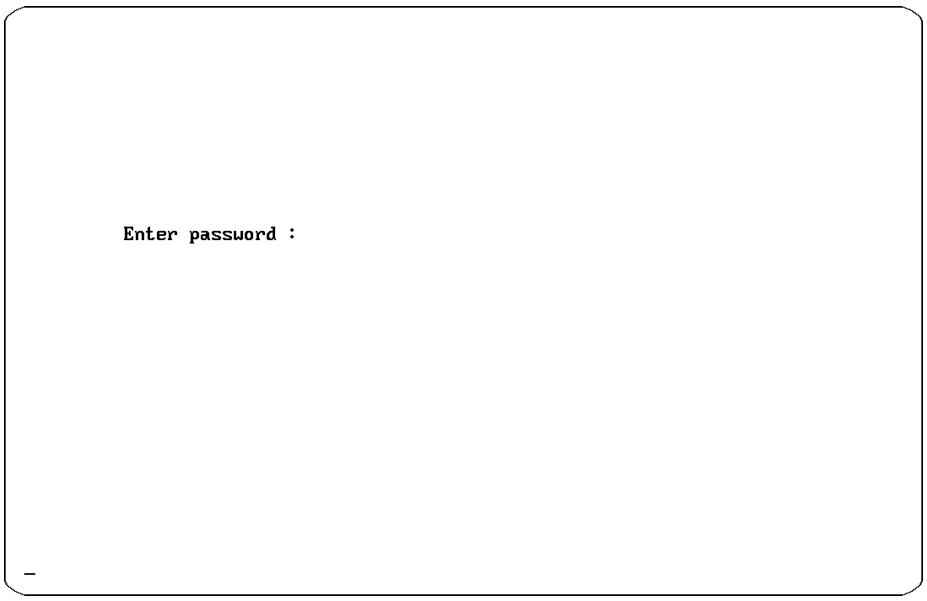

Figure 3-3. Password Screen

4. Enter the password and press **Enter**. (The default password is **netutil**). The Network Utilities Menu will appear.

Note

You can change the password in the **F7 ... Set Password** function in the Network Utilities screen.

Note

If you have TCP Version 0.01 on the screen below, you should replace the NETUTILT.EXE file in the LM90 directory with a newer version of the file from the GE Fanuc bulletin board — 804-978-5458.

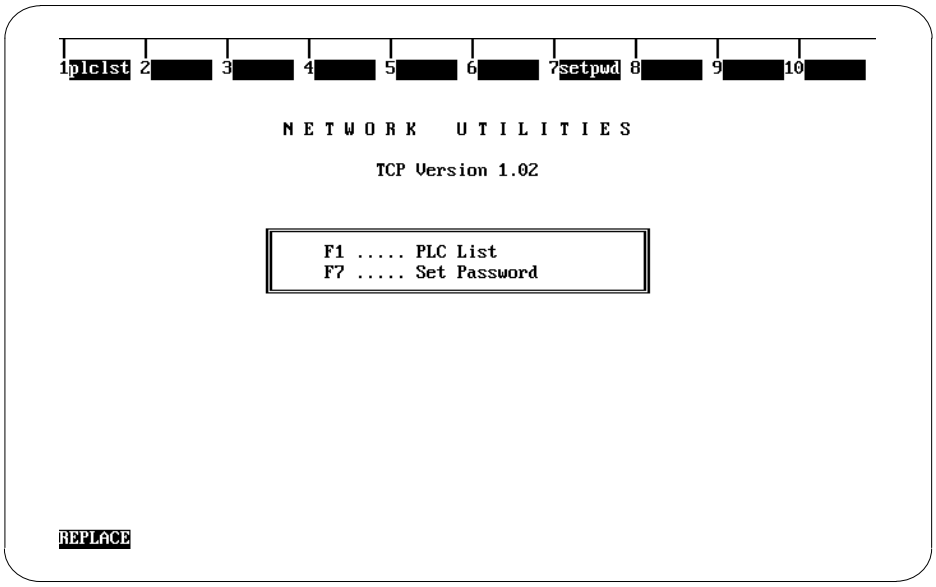

Figure 3-4. Network Utilities Menu

5. From the Network Utilities Menu, select **F1... PLC List.**

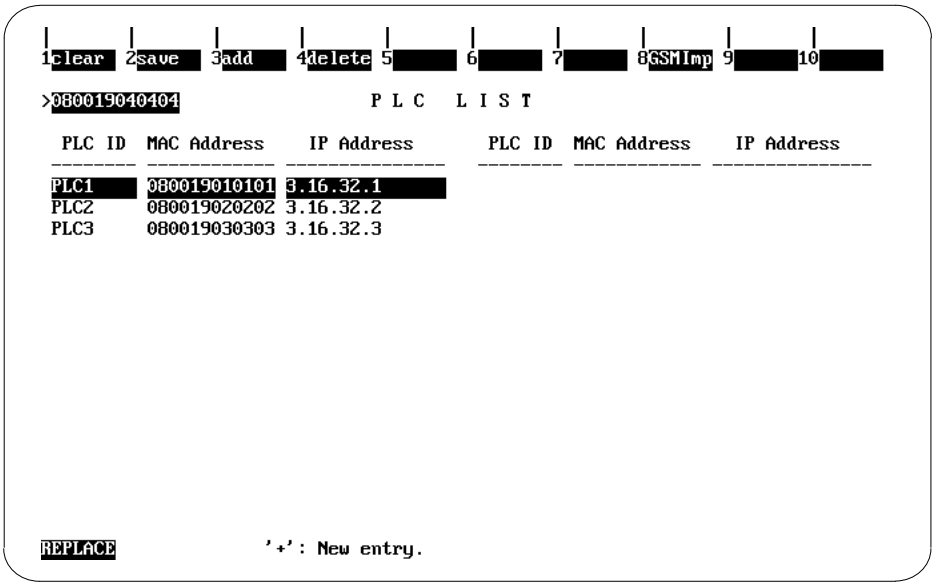
1clear 2save 3add 4delete 5 6 7 8GSMImp 9 10
>080019040404
P L C L I S T
PLC ID MAC Address IP Address PLC ID MAC Address IP Address
PLC1 080019010101 3.16.32.1
PLC2 080019020202 3.16.32.2
PLC3 080019030303 3.16.32.3
REPLACE
'+': New entry.

Figure 3-5. PLC List Screen

The MAC address, PLC ID and IP Address fields in the PLC List screen will be blank initially. In the screen above, however, these fields contain the information for a sample PLC list.

Adding an Entry to the PLC List

To add entries to the list, press **F3** (add). This will open an edit field in which you can input the MAC Address of the board to which you desire communications. After typing in the address, press **Enter** to add the entry to the list. Use the arrow keys to move the cursor to the IP Address Field for this MAC Address and enter the appropriate information. You must enter the IP address of the desired PLC. The MAC address is also referred to as the *board address*, and is used in the Select PLC Connection screen.

See the *Series 90-70 TCP/IP Ethernet Communications User's Manual*, GFK-1004 or *Series 90-30 TCP/IP Ethernet Communications User's Manual*, GFK-1084 for additional information on MAC and IP addresses.

Assigning PLC IDs

After executing the Add function, the PLC List contains only MAC/IP addresses for the PLCs. You can *locally* assign a PLC ID to the PLC to make it easier to use the list to establish communications with PLCs. See "Recommendations for Assigning PLC IDs" below.

This PLC ID is *local* to the personal computer running the Logicmaster 90 TCP/IP software. The PLC ID can be up to 8 characters long and can include any printable character.

To assign a PLC ID, move the cursor to the left hand field of the line containing the desired IP address, and type the PLC ID. Be sure to save the MAC/IP addresses and PLC IDs by pressing **F2** (save).

Recommendation for Assigning PLC IDs

The PLC ID is *local* to the personal computer running the Logicmaster 90 software and is not displayed on any Logicmaster 90 screen except for the Select PLC Connection screen (described later in this chapter). For this reason, we strongly recommend that you ***set the PLC ID equal to the SNP ID of the PLC***.

Only by following our recommendation for assigning PLC IDs will you be able to tell which PLC you are connected to in other parts of the Logicmaster 90 programming or configuration packages, simply by viewing the "ID:" field that appears in the status lines. A screen illustrating the use of this field is shown in Figure 3-6.

The SNP ID is set in the PLC, using the Logicmaster 90 Configurator software. To set the SNP ID, press **F2** in the Logicmaster 90 main menu, then press **F2** (CPU Configuration) in the Configuration Software menu. For additional instructions on setting the SNP ID, refer to the appropriate user's manual: GFK-0466, *Logicmaster 90-20/30/Micro Programming Software User's Manual* or GFK-0263, *Logicmaster 90-70 Programming Software User's Manual*.

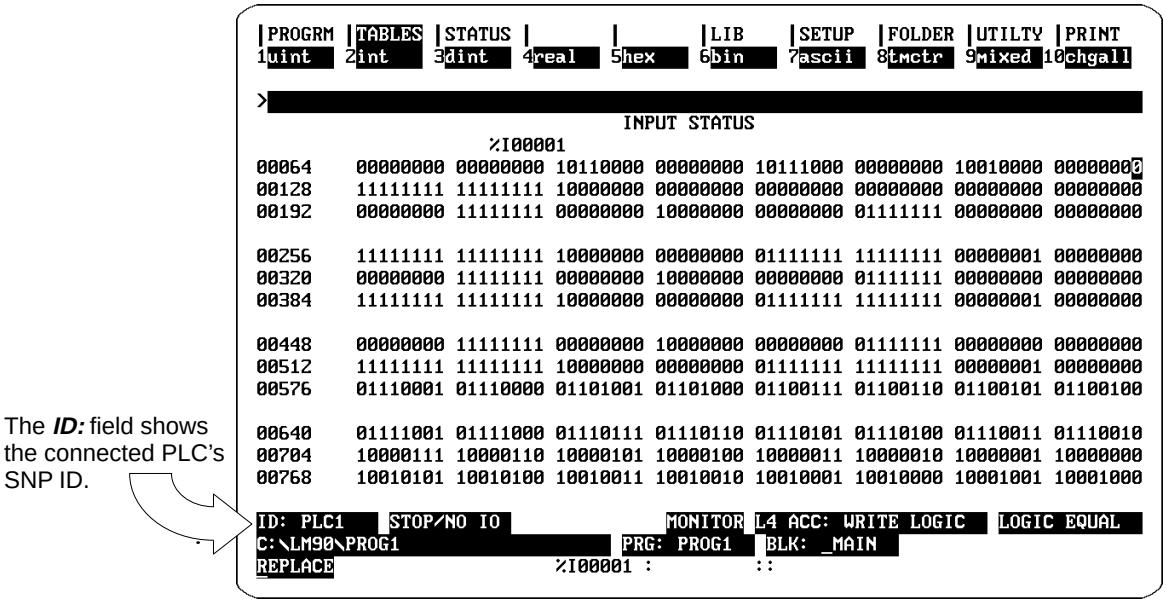

Figure 3-6. Use of "ID:" Field to Identify Connected PLC

Establishing Communications

The Select PLC Connection screen is used to select the PLC you wish to communicate with. This screen displays the same list of PLCs which was created as explained in the previous section. Each PLC in the list is identified by its board (MAC) address and PLC ID if a PLC ID has been assigned.

You may choose a PLC from this list or enter its PLC ID in the "Selected ID:" field. Refer to the instructions below.

To Establish Communications:

1. Go to the Select PLC Connection screen. To do this, first enter the Programmer Package Main Screen and then press **F7 ... Programmer Mode and Setup** to access the Programmer Setup menu as shown below.

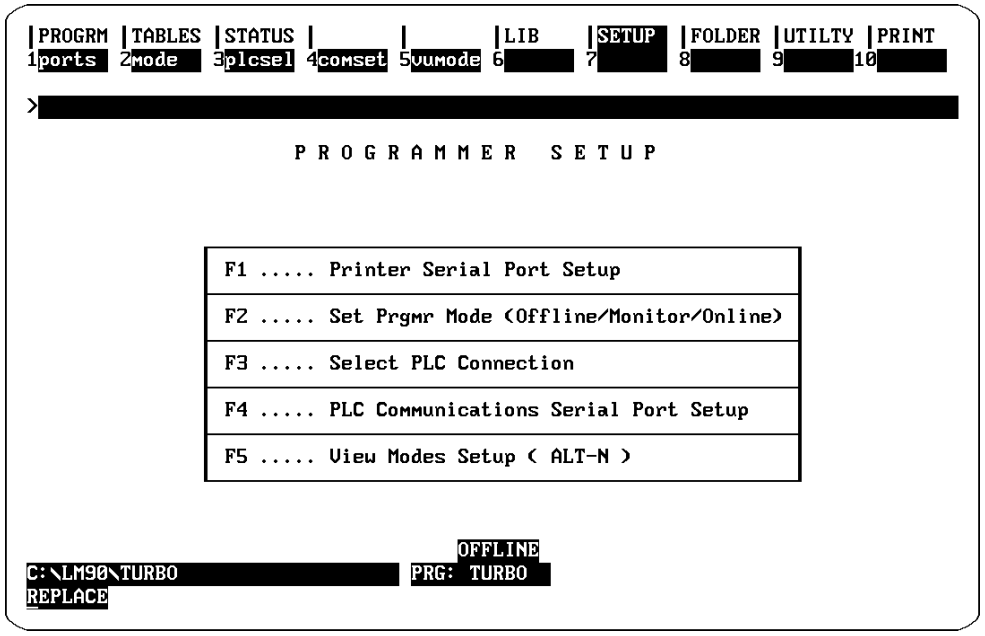
PROGRM TABLES STATUS LIB SETUP FOLDER UTILTY PRINT
1ports 2mode 3plcsel 4comset 5vumode 6 7 8 9 10
>
P R O G R A M M E R S E T U P
F1 ..... Printer Serial Port Setup
F2 ..... Set Prgmr Mode (Offline/Monitor/Online)
F3 ..... Select PLC Connection
F4 ..... PLC Communications Serial Port Setup
F5 ..... View Modes Setup (ALT-N)
OFFLINE
C:\LM90\TURBO
PRG: TURBO
REPLACE

Figure 3-7. Programmer Setup Menu

Then press **F3... Select PLC Connection**, to access the Select PLC Connection screen.

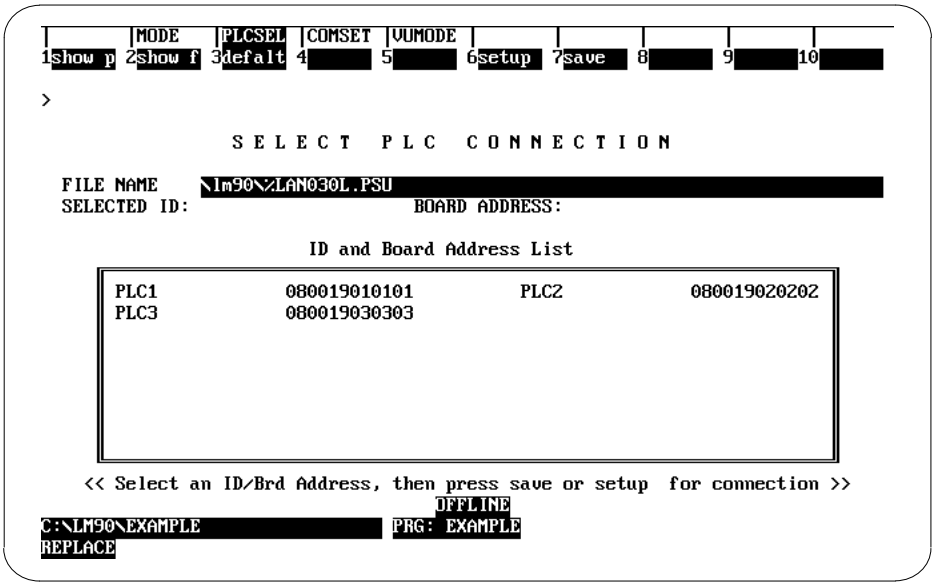

Figure 3-8. Select PLC Connection Screen

2. You can identify the PLC to which you want to connect in two ways.
   - Cursor to the desired PLC in the list and press **Enter** to select.
   - Or, type the PLC ID in the SELECTED ID field and press **Enter** to select.
3. To connect to the selected PLC, press **F6 setup** (or **F7 save**, which also sets up the connection).

   Logicmaster 90 software will then attempt to connect to the selected PLC. When successful, the ID field and other PLC status information will be updated in the status displayed at the bottom of the screen.
4. If you want to connect to the selected PLC whenever Logicmaster 90 is run, execute the **F7 save** function to save the selected PLC.

Storing Programs in Run Mode (Run-Mode-Store)

Before attempting to store a logic program to a PLC in Run mode or to modify a running program, you must first set the Logicmaster 90 Communications Window to *Limited* mode. Also, we recommend a time setting of 50 ms for the window.

Note

Logicmaster 90 prohibits storing programs in RUN mode if the Logicmaster 90 Communications Window is not set to Limited mode.

The mode of the Communications Window is set in the PLC Sweep Control screen. This screen is accessed from the Logicmaster 90 Programming main screen by pressing , **F3 ... PLC Control and Status**, and then **F1 ... PLC Sweep Control**.

Chapter 4 Network Utilities

This chapter describes the functions of the Network Utilities. These screens are used primarily by the personnel responsible for the operation of the network. But the PLC List screen is also very valuable to those using the Logicmaster 90-30 TCP / IP or Logicmaster 90-70 TCP / IP software for programming and configuring the PLCs on the network.

Selecting the Network Utilities

To select the Network Utility functions:

1. From the Logicmaster 90 Main menu select the Logicmaster 90 Utilities by pressing the **F7 ... Logicmaster 90 Utilities** function key. The following screen will be displayed.

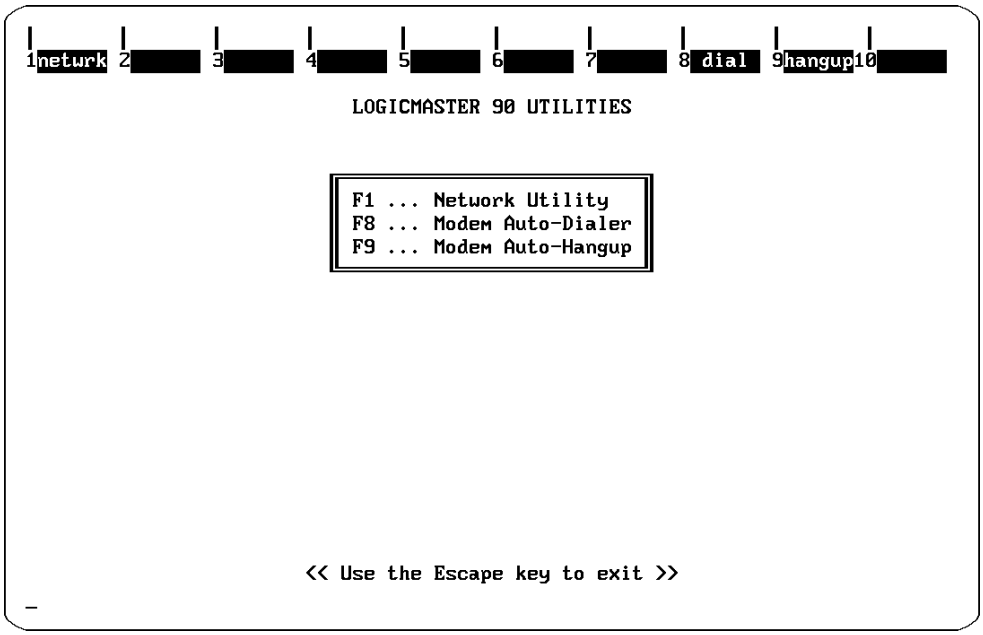

Figure 4-1. Logicmaster 90 Utilities Menu

2. Select the Network Utility by pressing **F1 ... Network Utility**. The password screen will then appear.

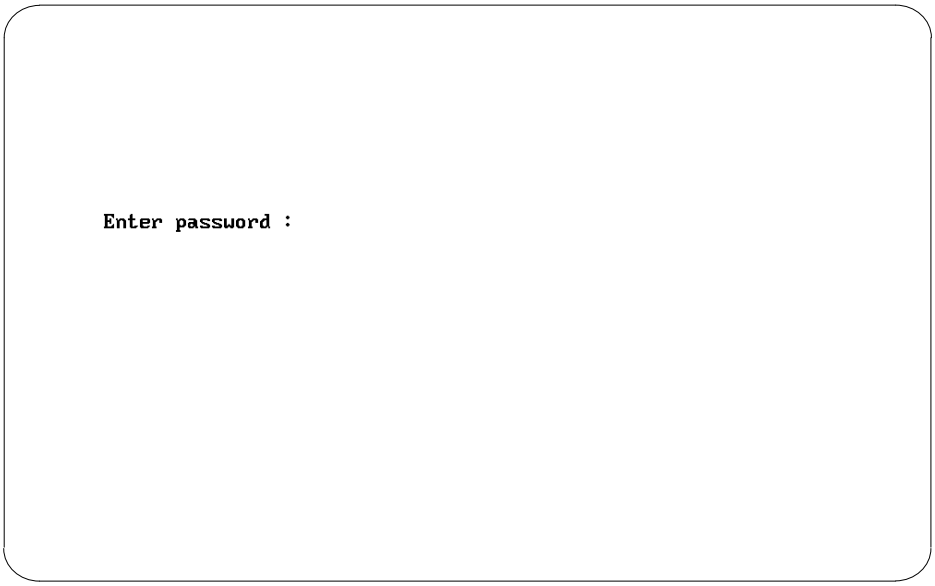

Figure 4-2. The Password Screen

Enter the password and press **Enter**. (The default password is **netutil**). The Network Utilities Menu will appear.

Note

You can change the password in the **F7 ... Set Password** function in the Network Utilities.

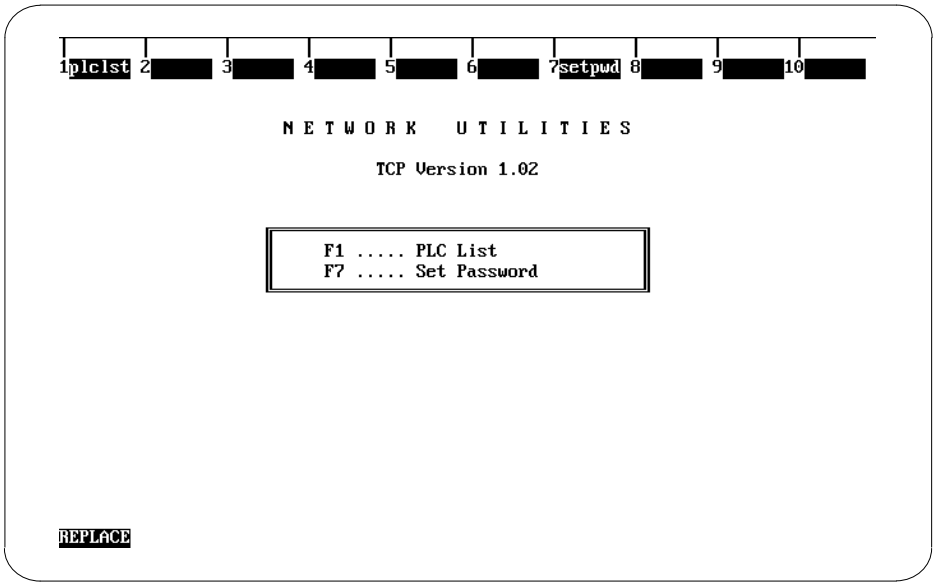

Figure 4-3. Network Utilities Menu

From the Network Utilities menu the following screens can be selected:

PLC List. Provides a list, entered by the user, of PLCs on the network. This list is subsequently displayed within the Logicmaster 90 programming packages on the Select PLC Connection screen.

Set Password. Allows you to change the password used to enter the Network Utilities.

These screens are described in detail later in this chapter.

Note

If you have TCP Version 0.01 on the screen below, you should replace the NETUTIL.EXE file in the LM90 directory with a newer version of the file from the GE Fanuc bulletin board – 804-978-5458.

Network Utilities Operation

The keys used in the Network Utilities sub-menus are described below.

Function Keys. The table below describes the function keys used in the Network Utilities.

Table 4-1. Use of the Function Keys in the Network Utilities

Key	Name	Function
F1	**clear**	Clears values of the displayed list.
F2	**save**	Saves the values of the displayed list.
F3	**add**	Adds a PLC name to the PLC List.
F4	**delete**	Deletes a PLC name from the PLC List.
F8	**GSMImp**	Special function to import PLC addressing information from GEnet System manager.

Field Selection Keys. The four **arrow** keys (**up**, **down**, **right**, and **left**) are used to select a field. The selected field is shown in reverse video.

Editing Keys. In cases where the selected field can be edited the following keys are used:

Table 4-2. Use of the Editing Keys in the Network Utilities

Key	Function
right arrow	Moves to the cursor to the PLC ID field
left arrow	Moves the cursor to the IP addr field.
Ctrl-right arrow	Moves the cursor to the right. The cursor can not be moved beyond the maximum length. The cursor can not be moved to a position in the field such that a space would result. There is no wrap around.
Ctrl-left arrow	Moves the cursor to the left. There is no wrap around.
Delete	Deletes the character above the cursor.
Insert	Switches keyboard between *Insert* and *Replace* modes.
'0' - '9'	Keys allowed for decimal input.
'0' - '9' **'a' - 'f'** **'A' - 'F'**	Keys allowed for hexadecimal input. The 'a' - 'f' keys are converted to upper case ('A' - 'F').
'0' - '9' **'A' - 'Z',** **_(underscore)**	Keys allowed for alphanumeric strings.

Exiting a Screen. The **Esc** key is used to exit the current screen and return to the previous screen or menu.

PLC List Screen

When the PLC List screen is displayed the list of PLCs is read from a file. This file is used by the Logicmaster 90 programming package to display the list of PLCs for connection. You may clear or modify this list of PLCs on the screen but these changes are not automatically written to the file. Press **F2 save** to write any changes to the file.

The PLC List screen is shown below.

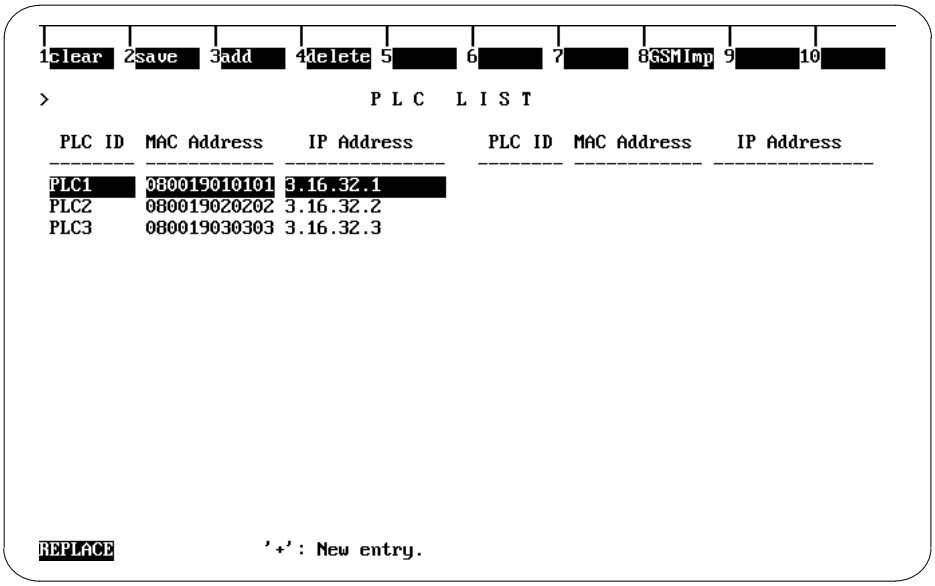
1clear 2save 3add 4delete 5 6 7 8GSMImp 9 10
> P L C L I S T
PLC ID MAC Address IP Address PLC ID MAC Address IP Address
PLC1 080019010101 3.16.32.1
PLC2 080019020202 3.16.32.2
PLC3 080019030303 3.16.32.3
REPLACE '+': New entry.

Figure 4-4. PLC List Screen

Clear Function. To clear the list of PLCs on the screen, press **F1 clear**.

Save Function. To write the currently displayed list to the file, press **F2 save**.

Add Function. To add a PLC ID to the list, press **F3 add**, and enter a full 12-digit MAC address. Press ENTER to add to the list. Refer to the section, "Adding an Entry to the List" in Chapter 3 for more information.

Delete Function. To delete an entry from the list, position the cursor on the name and press **F4 delete**.

GSMImp Function. To import addressing information for Series 90 PLCs previously configured using the GEnet System Manager (GSM), press **F8** (GSMImp). You will be prompted to enter the location of the GSM root directory. Upon entering this information, the GSM database will be searched for configured devices that support TCP / IPEthernet communication. Matching entries will be added to the PLC list. See the *TCP/IP Ethernet Communications for the Series 90-70 PLC User's Manual* (GFK-1004) for details about the GSM.

Set Password Screen

The Set Password screen allows you to change the password for the Network Utilities. The screen displays the password prompt as shown below.

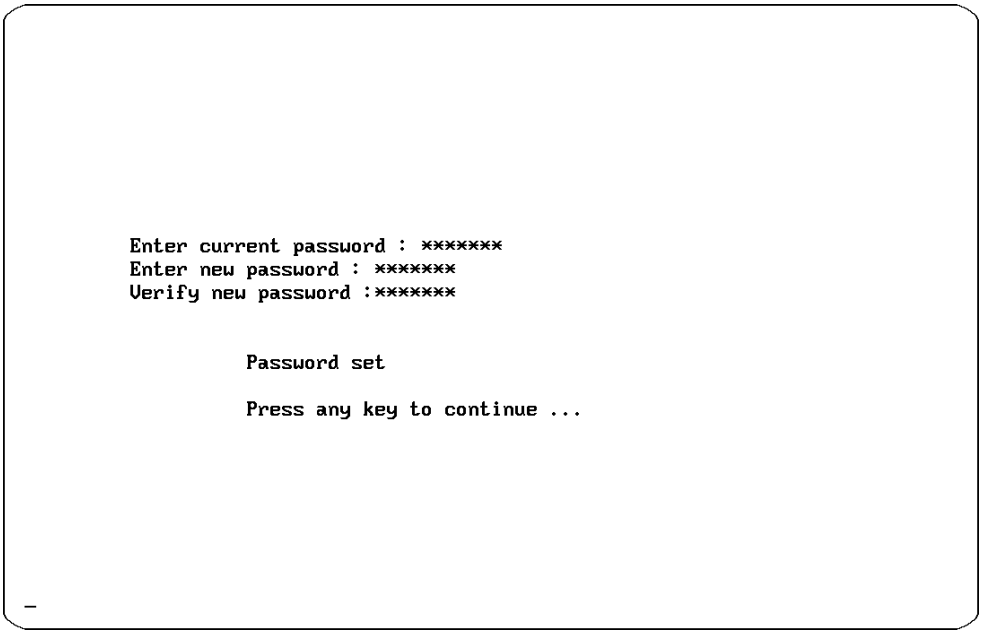

Figure 4-5. Set Password Screen

To change the password:

1. Type in the current password at the Enter current password prompt and press **Enter**. The New password prompt will be displayed.

   ```
   Enter new password :
   ```

2. Type in a new password and press **Enter**. The Verify password prompt will be displayed.

   ```
   Verify new password :
   ```

3. Type in the new password and press **Enter**. The following messages will then be displayed.

   ```
   Password set
   Press any key to continue ...
   ```

4. Be sure to keep a secure record of the new password.

Appendix A

Quick Start Install Program (Series 90-70 Only)

What Does the Quick Start Program Install?

Logicmaster 90-70 TCP/IP-Ethernet software consists of:

- GSM software for Ethernet Interface (IC697CMM741)
- Beame & Whiteside TCP/IP stack (BW-Connect TCP) software
- Logicmaster 90-70 TCP/IP Ethernet software

Quick Start installs these products together on one PC. Use it for the initial installation only, not for upgrades.

Note

The GSM software is required for installation of the Series 90-70 Ethernet Interface (IC697CMM741) before Logicmaster 90-70 TCP/IP Ethernet can communicate with the Interface.

Quick Start does not support installation of the GSM separately. If you wish to install the GSM on a different PC than the one running Logicmaster 90-70 TCP/IP-Ethernet, do the following.

1. Use Quick Start to install the GSM, Beame & Whiteside, and Logicmaster TCP/IP Ethernet software all together.
2. Delete the C:\GSM directory and all files in it.
3. Install the GSM on another PC using the instructions in GFK-1004.

The Quick Start Install Program uses NDIS drivers. It does *not* support:

- Novell or other ODI based network software.
- Other NDIS applications running on this PC.
- Installation to the D: drive.
- Installation from 5.25-inch diskettes.
- Installation from the B: drive.

The Quick Start Install Program does *not* support upgrades. Quick Start looks for the presence of Beame & Whiteside software on your PC. If it finds it, the Quick Start installation will be aborted. If this happens, refer to “Troubleshooting” on page A-8.

Installation Diskettes

The following diskettes are supplied with the Logicmaster 90-70 TCP / IP Ethernet Product. You must have all these diskettes in order to run this install program.

1 - Quick Start Install diskette.

1 - GSM diskette labeled Series 90-70 TCP / IP Ethernet Sw (IC651ENS042).

5 - Beame & Whiteside diskettes.

2 - Logicmaster 90 diskettes.

Before Running the Install Program

1. Create a bootable DOS diskette!

   If something goes wrong during this installation procedure, your computer may not boot properly. You will need a boot diskette.

   To create a bootable System Disk, place a floppy in **a:** drive. All data will be erased on the floppy so start with a new floppy or one that you don't need. Type:

   ```
   C:\> format a:/s
   ```

   (The formatting process will take a few minutes.)

2. Complete the worksheet on page A-3.

Worksheet

Network Adapter Card Information

For the following information, refer to your network adapter card user manual. For a list of cards that are supported by Logicmaster TCP / IP, see Table A-1.

Network Adapter Card Make / Model:_____

Network Adapter Driver Type: __NDIS_____

Hardware Interrupt for Network Adapter Card: _____

I / OAddress for Network Adapter Card: _____

Network Adapter Card configured for Shared Memory (Yes, No): _____

Starting Address for Shared Memory (0 if No shared memory): _____

Software Interrupt Vector: __7c

How is IP Address determined: _User entered

Time Zone: _____

IP Addresses

If you have an existing Ethernet Network that uses TCP / IP, then someone in your company takes care of assigning IP Addresses. That person should be able to provide the following information.

IP Address of Network Adapter Card: _____ If you have an isolated network you can use the IP address 003.000.000.001 for your Network Adapter Card. Make sure this address is not already being used by another station.

Subnet Mask: If needed, use the mask supplied by your System Administrator. If you don't know the mask, use 255.255.255.000: _____

IP Address of Gateway (if required): _____

IP Address of Domain Name Service (if required): _____

IP Address of Trivial Name Server(if required): _____

P Address of Time Server(if required): _____

IP Address of BOOTP Server(if required): _____

Company domain name: _____ If you don't have a company domain name, use a three-letter code for the company followed by .com (all in lower case). Example: abc.com

Table A-1. Network Adapter Cards Supported

Vendor	Vendor Model [Restrictions]	Driver	H/W IRQ	I/O Addr	Shared Memory	Start Addr	Buffer Space	S/W Int. Vector (deflt)
3Com	Etherlink II (3C503)	NDIS	3	300	No	0	10000	7c
3Com	Etherlink 3 (3C509)	NDIS	10	300	No	0	10000	7c
3Com	Etherlink 16 (3C507)	NDIS	3	300	No	0	10000	7c
3Com	Etherlink / MC (3C523) [ELNKMC.SYS v 2.0 min]	NDIS	3	300	No	0	10000	7c
SMC / Western Digital	EtherCard PLUS	NDIS	3	280	Yes	d000	10000	7c
SMC / Western Digital	EtherCard PLUS Elite 16	NDIS	3	280	Yes	d000	10000	7c
SMC / Western Digital	EtherCard PLUS / A	NDIS	3	280	Yes	d000	10000	7c
Intel	Intel 82593	NDIS	15	300	No	0	10000	7c
Xircom	PE2 [PE2NDIS.EXE v 1.44 min]	NDIS	7	378	No	0	10000	7c
Xircom	PE3	NDIS	7	378	No	0	10000	7c
IBM	PCMCIA	NDIS	5	300	Yes	d4000	10000	7c
NDIS supporting network card		Vendor-dependent						

Notes:

The values in this table are valid if you are using the default settings for the Ethernet Adapter.

Logicmaster 90 software requires as much memory as possible. A buffer space setting of 10000 leaves the most memory for Logicmaster 90. If you are running Beame & Whiteside Connect software with Windows applications, increase buffer space to 26,000 (the Beame & Whiteside default value).

Running the Install Program

1. **The Quick Start install program can only be run from the C:\TCP_TEMP directory.** To set up the C:\TCP_TEMP directory:

   A. Create the directory C:\TCP_TEMP.

      - Go to the C:\ root directory.
      - Type: **`MKDIR TCP_TEMP`**

   B. Copy all files from the Quick Start Installation disk to the C:\TCP_TEMP directory. To do this, type:

      ```
      Copy a:*.*  c:\tcp_temp
      ```

2. **Execute the Batch file I_LMTCP in the TCP_TEMP directory.** To do this, go to the C:\TCP_TEMP directory and type:

   ```
   I_LMTCP
   ```

   The install program will back up your AUTOEXEC.BAT file to AUTOEXEC.ADG and back up your CONFIG.SYS file to CONFIG.ADG.

   The install program then loads simple AUTOEXEC.BAT and CONFIG.SYS files, which are modified by the subsequent steps so they will work with Logicmaster TCP/IP Ethernet and the GSM.

   The software will prompt you for more information. To complete the installation, respond to the prompts as listed below and on page A-6.

Prompts for the GE Fanuc Series 90-70 TCP/IP Ethernet Software:

`GSMCFG pathname` - accept the default (press the **Enter** key).

`Choose the type of Ethernet adapter you are using` - enter the number of your Ethernet adapter (5 - 12 are Ethernet adapters). If your Ethernet adapter is not on the list, enter 12.

Prompts for the Beame & Whiteside TCP/IP Software:

Source drive for software - up / down arrow to drive, press **Enter** key.

Destination drive for software - you must put it on the **C** drive

What is the default directory for the software - accept the default (press the **Enter** key).

Select the Ethernet adapter you are using – press the up / down arrow key to find the adapter, then press the **Enter** key. (Note: If you selected one of the Ethernet adapters named on the Ethernet Adapter selection screen of the GSM portion of the install program, be sure to select the same adapter here in the Beame & Whiteside list. If you selected "Other " on the GSM screen, select the correct adapter here. If you selected an SMC / Western Digital adapter in the GSM installation, use the more specific entry listed here.)

Driver type to use - down arrow to NDIS, press the **Enter** key.

(FULL PAGE SCREEN) enter Ethernet adapter and IP addressing information - use the Worksheet you filled out.

Editing the Full Page Screen

Use the **Tab** key to change from field to field.

When a pop-down menu appears, use the arrow key to make a selection. Press **Enter**.

Do ***not*** press **Shift**+ **Tab** or **Esc**. Doing so will cause you to exit this screen.

Three digits must be entered for each of the IP address fields.

If you make a mistake on a field, you can cycle around again (by using the **Tab** key) to make corrections.

If you exit this screen prematurely, continue with the installation program. When you are finished, see"Troubleshooting" for instructions to return to this screen.

Enter your company domain name - get from Preliminary worksheet.

Modify Real System Files - Yes.

Do windows installation now - No.

Note

The next three prompts are for your information only.

Prompts for the GE Fanuc Logicmaster 90-70 Ethernet TCP/IP software:

Destination drive for software - must use "C".

Registration information - Accept and also accept confirmation if correct.

Modify AUTOEXEC.BAT and CONFIG.SYS - Yes.

Prompt for coordination of the installations:

Enter the Ethernet adapter you are using - Enter the appropriate letter. (Note: This should be the same adapter you selected in the GSM and B&W. If your adapter is not on this list, use "Other ".)

3. Edit the CONFIG.SYS file.

   A. Find the line

      DEVICE = C:\BWTCP\NDIS\PROTMAN.DOS ...

   B. Change all lines *below* that line that start with

      DEVICE=C:\BWTCP\ ... to

      DEVICEHIGH=C:\BWTCP\ ...

4. EdittheC:\LANMAN.DOS\PROTOCOL.INIfile.

   The text below is a sample PROTOCOL.INI file for the Etherlink MC adapter. Three of the four labels [in brackets] are the same for all PROTOCOL.INI files produced by this install program: [ProtMan], [ETHDEV], and GEFNDIS]. The fourth label, which is located below the [Protman] label, is different for each type of adapter. It is [ELNKMC] in this example.

   After you have completed the installation, you need to check this file and make sure of the following. Under [ETHDEV] label and the [GEFNDIS] label there is a line that begins ”Bindings = ...”. The characters to the right of the equal sign must match exactly the label in brackets located below the [ProtMan] label. For this example the name is “ELNKMC.”

   Sample contents of PROTOCOL.INI are shown below.

```
[ProtMan]
    DriverName=PROTMAN$
[ELNKMC]
   DRIVERNAME = ELNKMC$
[ETHDEV]
   DriverName=ETHDEV27
   Bindings=ELNKMC
[GEFNDIS]
   DRIVERNAME = GEFNDIS$
   BINDINGS = ELNKMC
   MAX_RX_SIZE = 560
   NUM_RX_BUFS = 8
```

5. Reboot your computer. Press **Control**-**Alt**-**Delete** or cycle power.

Troubleshooting Quick Start Install Problems

Case1: Your computer will not reboot or, after successfully rebooting, will not run Logicmaster software.

Make the following change to CONFIG.SYS to free more memory.

Note

If your computer will not reboot, you will need to reboot the computer using the boot disk you created before beginning the installation.

Change the line

DEVICE=\DOS\EMM386.EXE RAM 1024

to **DEVICE=\DOS\EMM386.EXE noems**

then reboot and try again.

Case 2: If you aborted at any time during the installation procedure, the installation will not work properly and you will need to start over.

Case 3: If you prematurely exited the Full-Page Beame & Whiteside screen, do the following to return to it.

Disk #1

a. Insert Beame & Whiteside diskette #1 into drive A.

b. From the C: prompt, type **a:bwinstall**

Proceed with the following selections.

- Select your source drive.
- Select "Change Network Driver".
- Select your destination drive.
- Enter destination directory.
- For the prompt, "Do you want to use existing NDIS information?" Enter **No**.
- Select your network adapter card.
- Select NDIS Driver Type.

Disk #2

a. When the Full-Page Screen appears, make the desired changes.

b. Press **F10** to accept changes.

c. For the prompt "Modify real system files?" Enter **NO.**

d. Proceed through the comment messages.

When you have finished the changes to the Beame & Whiteside setup, reboot your computer.

Case 4: The installation aborted because Beame & Whiteside Connect was found on your PC.

If you made a mistake in Quick Start Install and are starting over:

a. Delete C:\LANMAN.DOS\PROTOCOL.INI

b. Delete C:\BWTCP*.*

c. Delete C:\BWTCP\NDIS*.*

d. Redo the Quick Start Install.

If you are upgrading the GSM or Logicmaster 90-70 TCP/IP Ethernet on a PC with a working installation, do not use the Quick install program. Use the GSM, Beame & Whiteside, or Logicmaster 90-70 disk(s) with the associated install routine.

Related Documents:

See GFK-1029 for instructions on installing Logicmaster 90-70 TCP/IP Ethernet.

See GFK-1273 for instructions on installing the TCP/IP software.

See GFK-1004 for instructions on installing the GSM.

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